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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,811	03/04/2004	Shoji Sugiyama	K-2156	3650

7590

10/20/2004

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EXAMINER

PARSONS, THOMAS H

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,811

Applicant(s)

SUGIYAMA ET AL.

Examiner

Thomas H. Parsons

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the instant specification exceeds the 50 to 150 word range. Accordingly, the Examiner suggests that the abstract be shortened as appropriate.

3. The disclosure is objected to because of the following informalities:

Page 6, line 6-7, the text "...enough effect of preventing a short circuit **can not given**." appears awkwardly worded; and,

Page 14, line 2, suggest inserting "5" after "sample".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000-268796 in view of JP09-199100.

Claim 1: JP2000-269796 discloses a separator, which is composed mainly of fine glass fibers and also contains inorganic powder, and beaten natural pulp (abstract).

The recitation "for a valve regulated lead acid battery" has been considered yet construed as a statement of intended use that adds no further structure to the separator itself.

JP2000-269796 does not disclose the specific fineness, fiber length or amount (wt %).

JP09-199100 discloses heat-weldable organic fibers, wherein the heat-weldable organic fibers have a fineness of 1.5 d (deniers) or less and a fiber length of 1 mm or more, and the amount of the heat-weldable organic fibers is from 3% to 15% by weight (paragraphs [0033]-[0035] and [0057]-0058]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the separator of JP2000-268796 by incorporating the heat-weldable organic fibers of JP09-199100 because JP09-199100 teaches a heat-weldable organic fiber that would have provided an improved electrolyte holding rate, absorbency, alkali resistency (See paragraph [0064]) and reinforcement which the obtained separators need at the time of cell assembly thereby improving overall battery performance, life and mechanical strength.

Claim 2: JP2000-268796 discloses a separator wherein the amount of the inorganic powder is from 5% to 30% by weight and the amount of the natural pulp is from 2% to 15% by weight (abstract; and paragraph [0015]).

Claim 3: JP2000-268796 discloses a separator wherein the fine glass fiber is acid resistant glass fiber having a mean fiber diameter of 2.0 μm or less (abstract; and, paragraph [0016]).

Claim 4: JP2000-268796 discloses a separator wherein the inorganic powder is a silica powder having a specific surface area of 100 m^2/g or more (claim 3; and, paragraph [0018]).

Claim 5: JP2000-268796 discloses a separator wherein the natural pulp is beaten to the extent of 250 mL or less in the Canadian freeness (paragraph [0020]).

Claim 6: The rejection is as set forth above in claim 1 wherein further JP09-199100 discloses a separator wherein the fineness of the heat-weldable organic fibers is from 0.5 d to 1.5d (0.1 to 20d) and the fiber length of the heat-weldable organic fibers is from 1 mm to 10 mm (1.2 mm).

Claim 7: The rejection is as set forth above in claim 1 wherein the separator of the JP2000-268796 combination is of similar composition and manufactured by a similar process (paper milling). Accordingly, the separator of the JP2000-268796 would obviously have provided a separator density from 0.15 g/cm^3 to 0.18 g/cm^3 .

Claim 8: The rejection is as set forth above wherein further JP2000-268796 discloses a valve regulated lead acid battery.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP11-297293 discloses a separator composed of a heat weldable organic fiber in an amount of at least 20 wt%.

JP11-250889 discloses a separator composed of a heat-weldable organic fiber (core-sheath composite fiber) having a length of 3-7 mm and in an amount of 25-50 wt %.

JP2001-084986 discloses a separator composed of a heat-weldable organic fiber (thermally fused fiber) in an amount of 20-50 wt%.

WO00/55930 discloses a separator of a sealed lead-acid battery consisting chiefly of fine glass fiber, which contains 5-30 % inorganic powder by weight and 3-20 % natural pulp by weight and has a density of greater than 0.165 g/cm^3 .


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H. Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas H Parsons
Examiner
Art Unit 1745


Patrick Ryan
SPE - AU1745